



# Fuel, Wood Use, and Subsistence

Jennifer Schmidt, Amanda Byrd, Todd  
Brinkman, Gwen Holdmann, Alana  
Vilagi, and Baxter Bond



Arctic Frontiers  
Tromsø, Norway  
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[jischmidt0@gmail.com](mailto:jischmidt0@gmail.com)



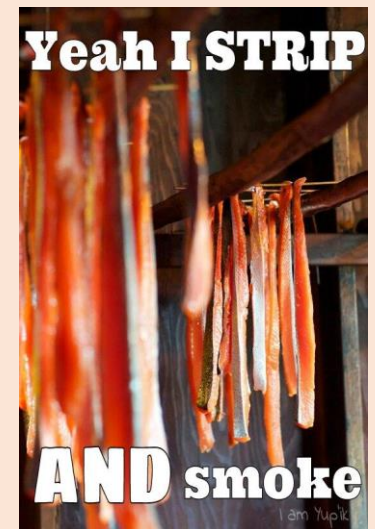
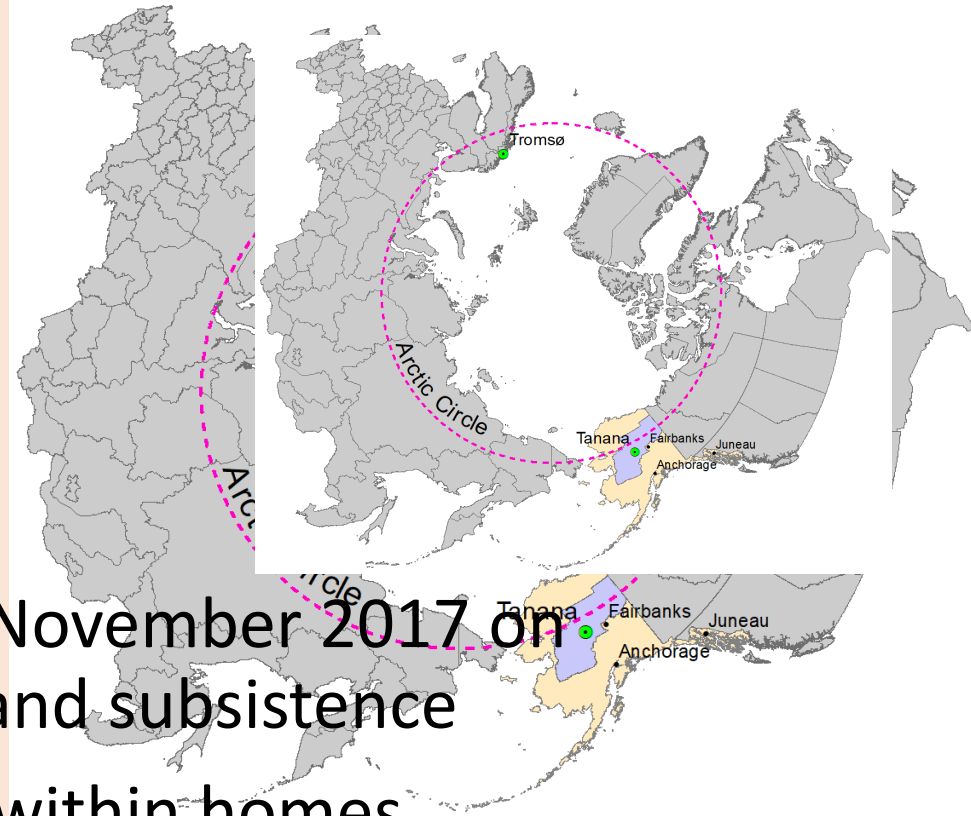
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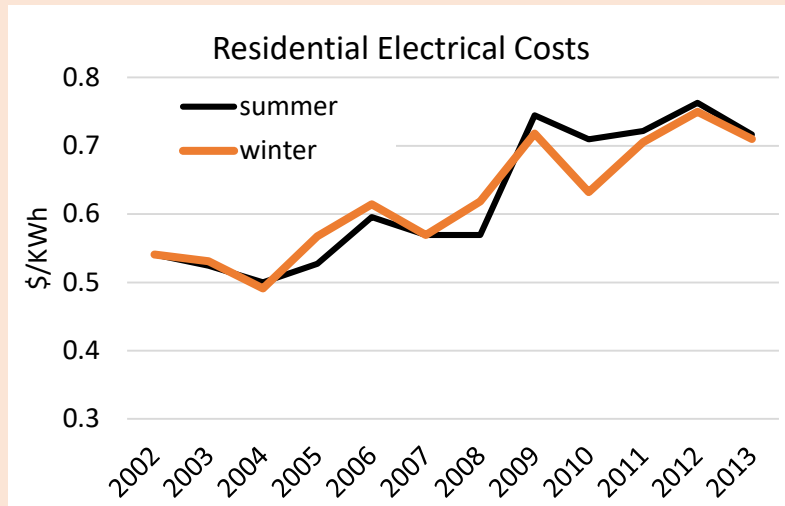
# Methods

- Tanana, Alaska
  - Interior Alaska
  - Winter lows -50 °F or -46 °C
  - Summer highs 90 °F or 32°C
- 61 household interviews in November 2017 on biomass, wood harvesting, and subsistence
- 12 heat monitors on stoves within homes

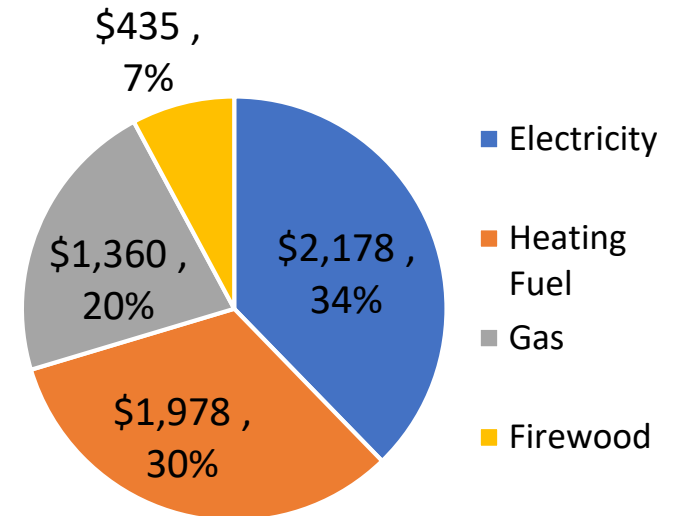




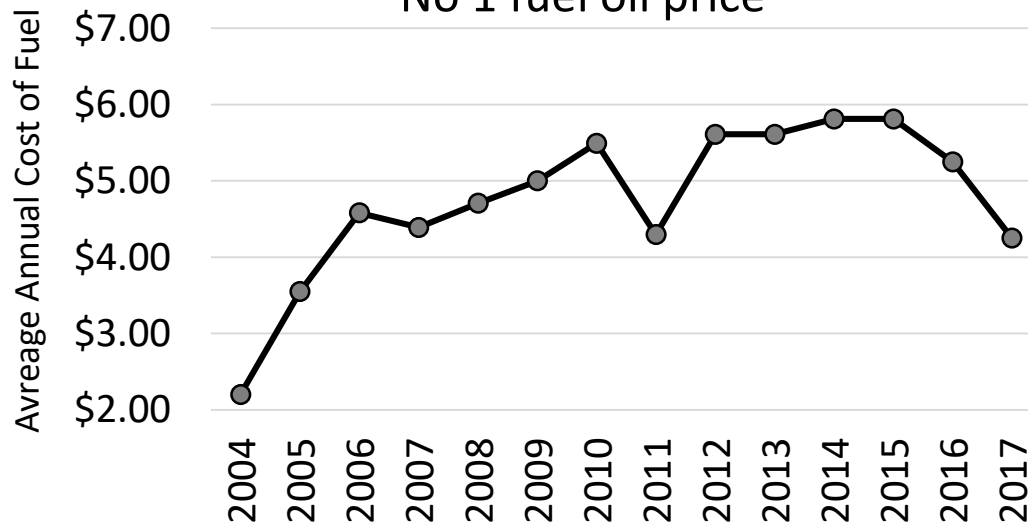
# Why are residents turning to biomass?



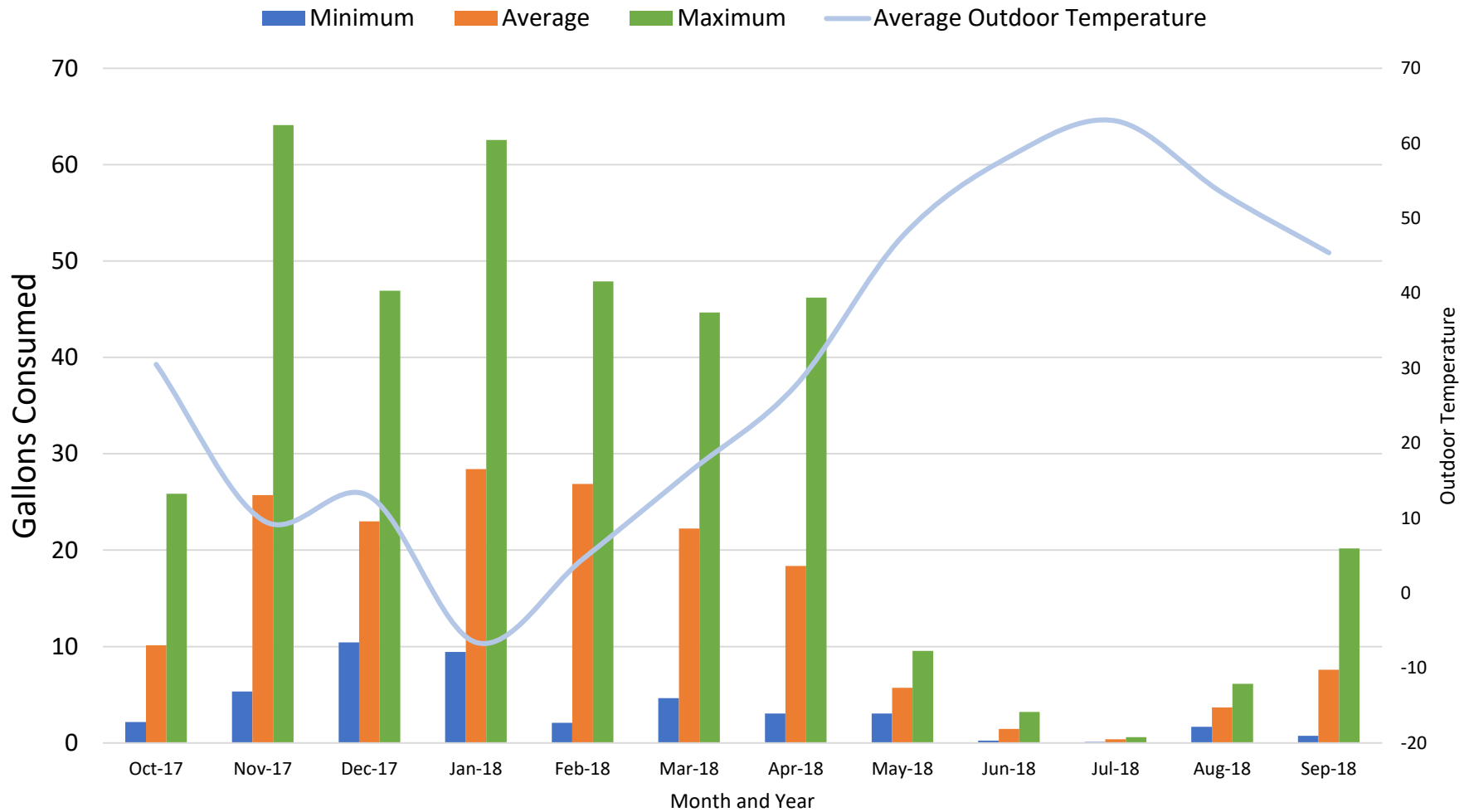
How much of your income goes towards energy costs?



No 1 fuel oil price



# Household Fuel Use per Month



**Annual Costs (at \$5.50/gal):**

**Annual Cost Minimum: \$236**  
**Annual Cost Average: \$954**  
**Annual Cost Maximum: \$2,078**

# What does heat look like in Tanana?

## Making Heat

### Wood Depot



Photo courtesy of Chas Jones



## Using Heat

### Public water



### Washeteria



### Public worker buildings: Firehouse, VPSO, Triplex, Teacher housing



### Greenhouse

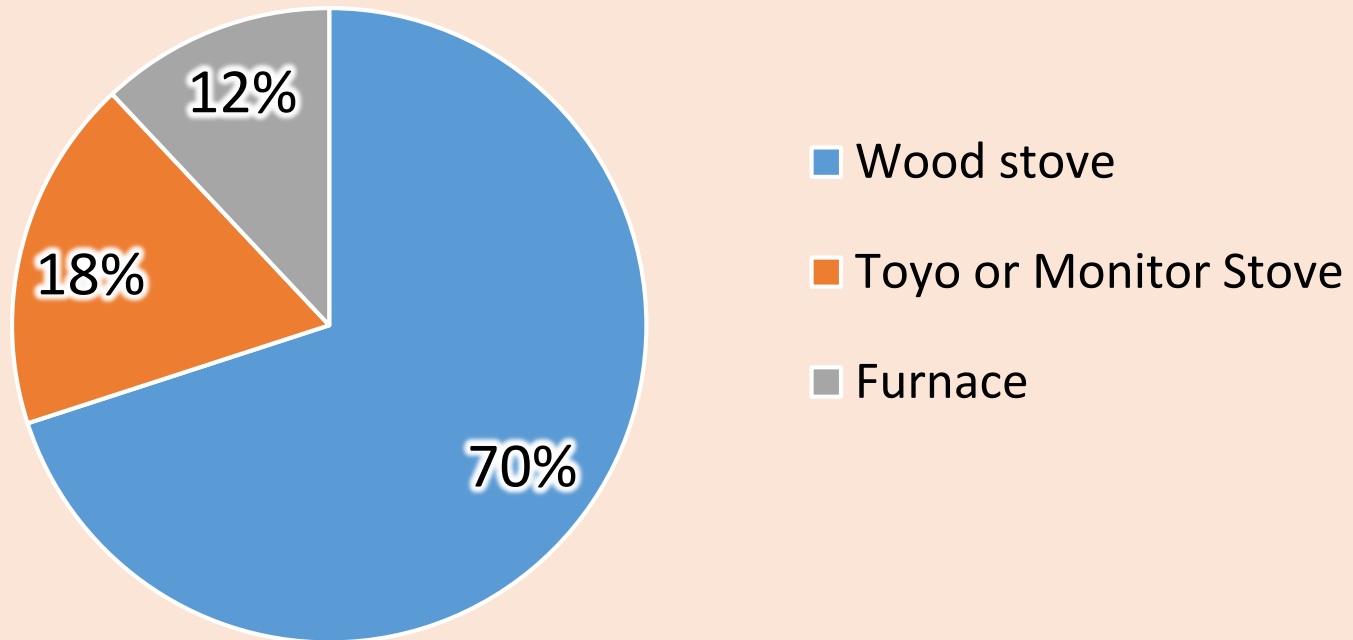


### Residential houses, City & Tribal offices



# How do people in Tanana heat their homes?

People estimated they save \$1,611 annually by using wood!



34% of households have used less wood because of weatherization actions

# How much do people harvest?

Total in a year: 690 cords



Cord = 3.6 cubic meters



# What other benefits do people get from harvesting wood?



Reduce  
energy costs  
89%



Fuel costs  
matter less  
74%

Fire is a nice heat  
source 87%

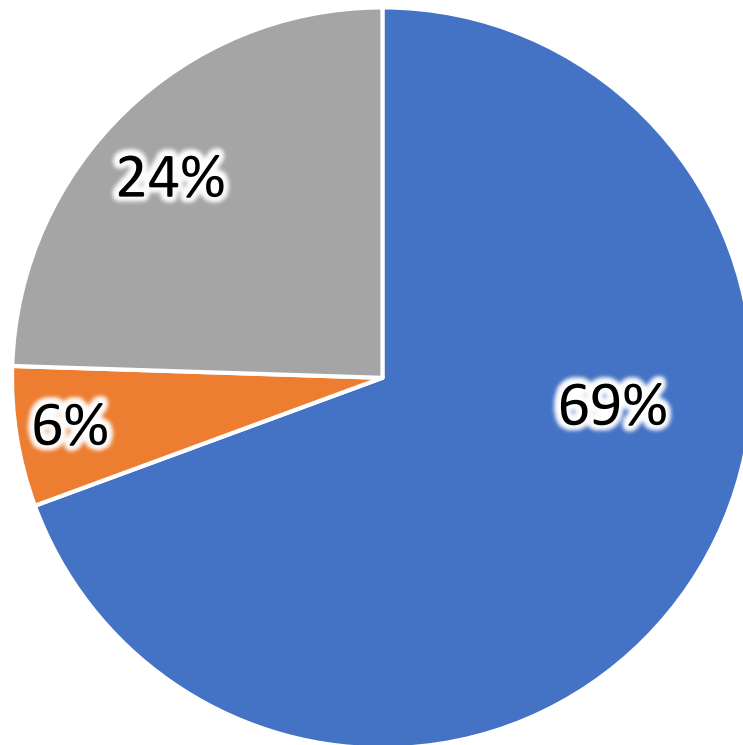


Exercise 72%

“Lost weight, easier  
to move around”



# Are Tanana Residents Satisfied with the Biomass Harvesting Program?



- Most people know about the program (82%)

■ Satisfied

■ Not satisfied

■ Neutral

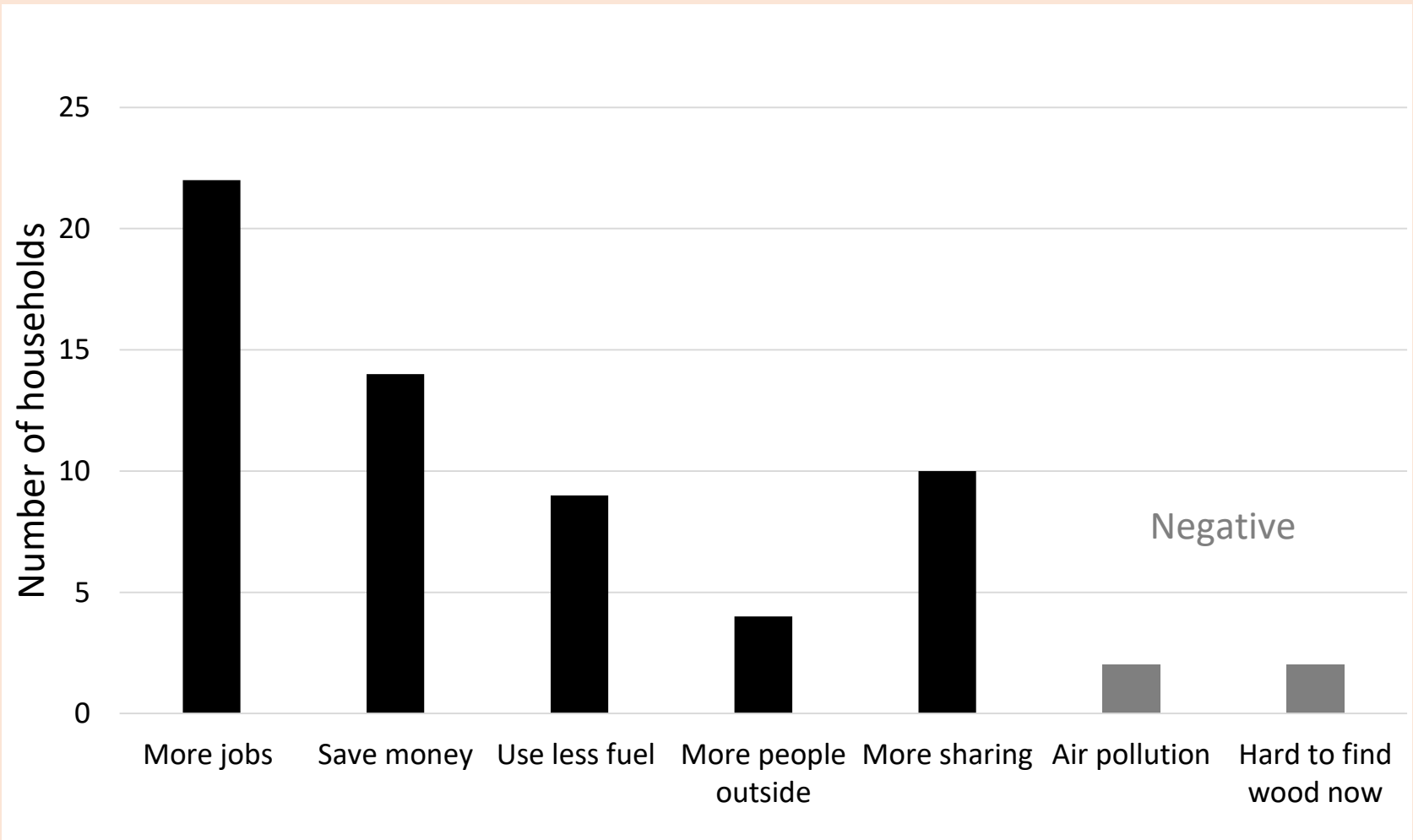
# Wood harvest: participation, jobs, and income

- 29% have participated in the biomass harvest program
- 18% of people we interviewed made money harvesting wood. 11 people of 61
- On average each person made \$2,568.





# Why are people satisfied or dissatisfied?



# Who does the wood harvesting?

- People who are also out doing subsistence
- Households with slightly more income





# Subsistence and Wood harvest



Half of people believe that the amount of wood harvested have not changed in the last 10 years (47%)

75% of people say wood harvesting does not affect subsistence harvest





# Wood harvest overlaps nicely with subsistence

Come back empty from hunting or fishing ..... Grab wood!



Flexible schedule

20% of people barter with their wood harvest

# Who does subsistence?

- Wood harvesters
- Wood vendors
- Households with higher income
- Households with more people
- Those employed fulltime, followed by part-time, seasonal, etc.

# Conclusions

- Wood harvest is very important to Tanana and without access or use of wood energy costs would be overwhelming
- Wood harvest, biomass, and subsistence go together nicely
  - Wood harvest is often done as its own activity, but it is sometimes coupled with getting subsistence foods
  - People who do subsistence typically have the equipment needed to harvest wood
- For now, wood harvest for the biomass program does compete with local harvest (i.e. plenty of wood available)



Thank you to  
the residents of  
Tanana

